**Overview**

*Purpose*

*Entities, state variables, and scales* There are three entities present in this ABM: the environment patches, the deer agents, and the deer release site agents.

Patches are 1ha representations of the landscape of Corsica, and the movement decisions of deer are influenced by the characteristics of these patches, present as x layers:

1. Landcover class: Artificial, Agricultural, Forest, Scrub, Bare, Wetland.
2. Slope: in x units calculated by x method
3. Distance to road: the Euclidean distance to the nearest x type road, in meters.

*Process overview and scheduling* Each tick represents a 12 hour period, as this is the temporal resolution of the GPS tracking data.

**Design Concepts**

*Emergence*

*Adaptation*

*Fitness*

*Prediction*

*Sensing*

*Interaction*

*Stochasticity* The next patch an individual deer selects to move to is chosen probabilistically based on the

*Collectives*

*Observation*

**Details**

*Initialisation*

*Input*

*Sub-models*

The main sub-model is the ‘move’ procedure. This simulates the deer movement by calculating the relative probability to move to any surrounding patch within the max movement distance (8.65km). The probability to move from location X to location Z is given by:

Where β is sampled from a , i = the parameters identified in the final step selection function, and n = the total number of patches.